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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/046,434	01/14/2002	James Edward MacDougall	05977PD USA	3447

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AIR PRODUCTS AND CHEMICALS, INC.
PATENT DEPARTMENT
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EXAMINER

STEIN, STEPHEN J

ART UNIT PAPER NUMBER

1775

DATE MAILED: 10/23/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/046,434

Applicant(s)

MACDOUGALL ET AL.

Examiner

Stephen J Stein

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

2. Claims 18-24, 27-33, 36 and 37 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 5,858,457 (Brinker et al.)

Brinker teaches a method of making a ceramic film by preparing a film-forming fluid comprising a ceramic precursor, a catalyst, a surfactant and solvents; depositing said film-forming fluid on the substrate; and removing said solvents from said film-forming fluid on the substrate to produce the ceramic film on the substrate (column 1, lines 46-48; column 5, lines 29-44; and claim 1). Brinker further teaches that the porosity of the ceramic film is 40-60% (col. 4, line 7). With regard to the claimed dielectric constant, metals content, and pore size it is expected that the disclosed ceramic film would exhibit these properties since the Brinker reference is preparing ceramic film in the identical manner as disclosed and claimed by applicants. It has been held that where the claimed and prior art products are identical or substantially identical in structure or are produced by identical or a substantially identical processes, a prima facie case of either anticipation or obviousness will be considered to have been established over functional limitations that stem from the claimed structure. *In re Best*, 195 USPQ 430, 433 (CCPA 1977), *In re Spada*, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). The *prima facie* case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed products. *In re Best*, 195 USPQ 430, 433 (CCPA 1977).

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3. Claims 18-24, 27-33, 36 and 37 are rejected under 35 U.S.C. 102(b) as being anticipated by US 5,645,891 (Liu et al.).

Liu et al. teaches a process of preparing a mesoporous ceramic film comprising mixing a film fluid comprising a ceramic precursor, a promoter (catalyst), a surfactant and solvents; depositing said film-fluid on the substrate; and removing said solvents from the film-forming fluid on the substrate to produce said ceramic film on the substrate (column 3, lines 29-38; column 7, lines 22-45; and column 8, lines 14-19). With regard to the claimed dielectric constant, metals content, porosity and pore size, it is expected that the disclosed ceramic film would exhibit these properties since the Brinker reference is preparing ceramic film in the same manner as disclosed and claimed by applicants. It has been held that where the claimed and prior art products are identical or substantially identical in structure or are produced by identical or a substantially identical processes, a *prima facie* case of either anticipation or obviousness will be considered to have been established over functional limitations that stem from the claimed structure. *In re Best*, 195 USPQ 430, 433 (CCPA 1977), *In re Spada*, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). The *prima facie* case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed products. *In re Best*, 195 USPQ 430, 433 (CCPA 1977).

Claim Rejections - 35 USC § 103

4. Claims 25, 26, 34 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu.

As stated above, Liu discloses the claimed invention, but is silent on the disclosed film exhibiting a desired Bragg diffraction by X-ray diffraction pattern.

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Absent, a showing of criticality with respect to the Bragg diffraction, it would be obvious to a person of ordinary skill in the art vary the disclosed components of the disclosed film forming composition to optimized the ordered pores so as to arrive a at a desired/or non-desired Bragg diffraction. It has been held that discovering an optimum value of a result effective variable (pore orientation) involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Response to Arguments

5. Regarding the rejections made over Brinker under 35 USC 102, applicants argue that while the examiner argues that the claimed properties would be inherent features of the films of Brinker et al. because the process of Brinker et al. is identical to the claimed properties, the reference does not teach desirability of such properties or the means for achieving them. Applicants further argue that the Brinker reference teaches the use of (1) mineral acid catalysts (e.g., HCl at column 5, lines 10-15); and (2) cationic and anionic surfactants in addition to the non-ionic surfactants without appreciating the advantages of using only the latter.

This argument has been carefully considered, but not deemed persuasive. First, a rejection under 35 USC 102 has been made asserting that the reference inherently discloses the claimed properties since the reference teaches all the same steps as for making the ceramic as claimed by applicants. Since a rejection has been made under 35 USC 102, it is irrelevant that reference fails to teach the desirability of the properties, since the reference is teaching all the claimed limitations. Further, the reference does teach the means for achieving the claimed properties since it teaches all the same steps of manufacture as claimed by applicants. Second, applicants' arguments regarding appreciating the advantages of using only non-ionic surfactants

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versus using both ionic and non-ionic surfactants is also not relevant since again the reference is teaching all the steps of making the claimed ceramic film as that claimed by applicants.

Additionally, it is noted that applicant's claims do not specify a type of surfactant.

It is well settled that where the claimed and prior art products are identical or substantially identical in structure or are produced by identical or a substantially identical processes, a *prima facie* case of either anticipation or obviousness will be considered to have been established over functional limitations that stem from the claimed structure. *In re Best*, 195 USPQ 430, 433 (CCPA 1977), *In re Spada*, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). The *prima facie* case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed products. *In re Best*, 195 USPQ 430, 433 (CCPA 1977). Applicants have provided no evidence that the prior art product in the prior art do not necessarily possess the claimed properties of the claimed products. Attorney argument can not take the place of the evidence.

Regarding the rejections made over the Liu reference, applicants make the same arguments that were made for the rejection made over the Brinker reference. These arguments are not found persuasive for the reasons stated above.

Regarding the rejections made under 35 USC 103, to claims 25 and 26 over the Liu reference, applicants again repeat the argument above. This argument is also not found persuasive for the reasons stated above.

Conclusion

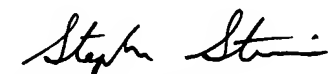
6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen Stein whose telephone number is (703) 305-0583. The examiner can normally be reached on Monday through Friday from 8:30 a.m. to 5:00 p.m. If the attempts to reach the examiner are unsuccessful, the examiner's supervisor, Deborah Jones can be reached by dialing (703) 308-3822. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group Receptionist whose phone number is (703) 308-0661. The fax phone number for this group is (703) 872-9310 for non-final responses and (703) 872-9311 for after final responses.

October 21, 2003



Stephen J. Stein
Primary Examiner
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